

REMARKS

Claims 1-18 are currently pending and stand rejected. Claims 1, 12, 14 and 15 have been amended. Claims 19-22 have been added. The Specification and Drawings have both been amended. No new matter has been added. The Examiner's reconsideration of the objections and rejections in view of the above amendments and the following remarks is respectfully requested.

The Specification and Drawings have been amended. The Specification has been amended to include a description of Figure 5 as filed. Figure 5 as filed has been relabeled to Figure 5a in the amended drawing. Figure 5b depicting an exemplary embodiment of the invention that was described in the Specification as filed has been added.

Claims 1, 12, 14 and 15 have been amended to further define the invention.

Claim Rejections – 35 U.S.C § 102

Claims 1 and 15 are rejected under 35 U.S.C § 102(b) for the reasons stated on page 2 of the Office Action as being anticipated by Ueda *et al.* (U.S. Patent No. 4,786,891), hereinafter "**Ueda**". Claim 14 is rejected under 35 U.S.C § 102(b) for the reasons stated on pages 2-3 of the Office Action as being anticipated by Margolin (U.S. Patent No. 4,762,391), hereinafter "**Margolin**". The rejections are respectfully traversed.

Claims 1 and 15 have been amended to recite *inter alia* "*an optical signal being transmitted by an optical fiber cable*" and "*discounting any signal from photo-sensors that do not receive the optical signal, for automatically aligning the optical fiber to at least one of the photo-sensors*".

Ueda, in col. 2, lines 25-39, discloses a "... A first [photo] sensor array 21 is placed in the vicinity of first grid pattern 11, in order to detect the first grid pattern 11...

The front of code plate 1 is irradiated with a parallel light, and each light receiving surfaces of [photo] sensors 21 and 22 is irradiated with light passing through the transparent portions of the grid pattern 11,12 (thus forming a stripe light pattern), respectively."

Ueda irradiates photo sensors through a grid pattern, but not *transmitted via an optical fiber cable* as essentially claimed in amended Claims 1 and 15.

Ueda further discloses, in col. 2, lines 45-57, "In Fig. 2, each of the first and second sensor arrays 21, 22 comprises an arrangement of a plurality of silicon photodiodes... First and second switch circuits 31, 32 are respectively connected to the photodiodes in first and second sensor arrays 21, 22. First and second switch driving circuits 41, 42 successively turn ON and OFF the switches in each switch circuit 31, 32 at a constant time interval... A first signal processing circuit 51 is fed signals from the first switch circuit 31 and amplifies and filters these signals and then changes these signals into rectangular waves through a wave form shaping process."

Ueda does not disclose or suggest the use of such a controller or process for processing signals from an optical fiber. Thus, it follows that **Ueda** does not teach the process of aligning the optical fiber to a photo-sensor.

Accordingly, **Ueda** does not disclose or suggest *"discounting any signal from photo-sensors that do not receive the optical signal"* nor *"automatically aligning the optical fiber to at least one of the photo-sensors"* claimed, *inter alia*, in amended Claims 1 and 15.

Claims 14 has been amended to recite *inter alia* "wherein the controller comprises DC extraction circuitry for extracting a DC component from the output of

each photo-sensor in the array, AC extraction circuitry for extracting an AC component from the output of each photo-sensor in the array, and multiplier circuitry coupled to both the DC and AC extraction circuitry for generating a separate multiplier output based on the AC component and the DC component of the output of each photo-sensor in the array".

Margolin discloses, in col. 2, lines 18-22, a coherent fiber optic array with fibers mismatched in size and/or location, from the input to the output of the fiber optic array, where the output is imaged onto an electronic sensor array. A calibration arrangement is employed to generate a subset of addresses of sensors from the sensor array that are to be interrogated during each scan period. The subset of addresses is selected based on the output of the sensor array while being irradiated by a test signal. Thus, the input ends of fibers of a coherent fiber bundle are associated with the addresses of sensors to be interrogated so that the image scanned can be properly reconstructed based on information gained during calibration.

Margolin extracts an image based on the output of the sensor array, but does not disclose or suggest the extraction of a DC and an AC component from each sensor of the sensor array. Thus, it follows that **Margolin** does not teach a controller having circuitry to extract the DC and AC components from the outputs of each photo-sensor in an array of photo-sensors.

Accordingly **Margolin** does not disclose or suggest system having a controller comprising "*DC extraction circuitry for extracting a DC component from the output of each photo-sensor in the array*" and "*AC extraction circuitry for extracting an AC*

component from the output of each photo-sensor in the array" as is claimed, *inter alia*, in amended Claim 14.

Therefore, Claims 1 and 15 are neither anticipated nor rendered obvious by **Ueda** and Claim 14 is neither anticipated nor rendered obvious by **Margolin**. Accordingly, reconsideration and withdrawal of the rejections are requested.

Claim Rejections – 35 U.S.C § 103

Claims 2-13 and 16-18 are rejected under 35 U.S.C § 103(a) for the reasons stated on pages 3-6 of the Office Action as being unpatentable over **Ueda** in view of **Curbelo** (U.S. Patent No. 5,262,653, hereinafter "**Curbelo**"). Applicants respectfully disagree, for at least the reasons given below.

Curbelo in col. 2, lines 53-61, discloses a photo-detector coupled to a linear amplifier system whose output signal is digitized and corrected according to stored calibration information that is representative of the non-linear characteristic of the photo-detector. The corrected digitized values thus exhibit a linear characteristic as a function of the intensity of the light source.

Curbelo does not disclose an *optical signals being transmitted via an optical fiber cable and the automatic alignment of the fiber optic cable to at least one of the photo-sensors*.

The above claim rejection is based, in part, on the contention that **Ueda** discloses the features of Claims 1 and 15, from which Claims 1-13 and 16-18 depend. Claims 1 and 15 are patentably distinct from **Ueda** for at least the reasons discussed above.

Curbelo fails to cure the deficiencies of **Ueda**, as it does not disclose or suggest a controller for or the method steps of *detecting which of the photo-sensors receives the*

optical signal, and deriving a received signal from any output of any of said photo-sensors that detects the optical signal, and discounting any signal from photo-sensors that do not receive the optical signal, for automatically aligning the optical fiber to at least one of the photo-sensors as is essentially claimed in Claims 1 and 15.

Thus, the above combination is legally deficient to establish a prima facie case of obviousness because at the very least the combination does not disclose or suggest all of the claimed features.

Claim 11 is rejected under 35 U.S.C § 103(a) for the reasons stated on pages 6 and 7 of the Office Action as being unpatentable over **Ueda** in view of **Curbelo**, as applied to claims 2 and 10, and further in view of Gariboldi (U.S. Patent No. 5,747,978), hereinafter "**Gariboldi**". Applicants respectfully disagree for at least the following reasons.

Gariboldi, as stated in the abstract, teaches "A circuit for generating a reference voltage and detecting a drop in a supply voltage..."

The above claim rejection is based, in part, on the contention that **Ueda** and **Curbelo** disclose the features of Claims 1, 2 and 10 from which Claim 11 depends. Claims 1, 2 and 10 are patentably distinct from **Ueda** and **Curbelo** for at least the reasons discussed above. **Gariboldi** fails to cure the deficiencies of **Ueda** and **Curbelo**, as it does not disclose or suggest a controller for or the method steps of *detecting which of the photo-sensors receives the optical signal, and deriving a received signal from any output of any of said photo-sensors that detects the optical signal, and discounting any signal from photo-sensors that do not receive the optical signal, for automatically aligning the*


optical fiber to at least one of the photo-sensors as is essentially claimed in Claims 1 and 15.

Even assuming *arguendo* that if the three references can be combined, the combination still fails to teach each feature of Claim 11. The Office Action, on page 7, characterizes Gariboldi as teaching "...it is well known in the art to provide a hysteresis for a switch....". In col. 5, lines 49-50, **Gariboldi** teaches "This positive feedback gives rise to hysteresis...", but not *the switch having a hysteresis*, as essentially claimed by Claim 11. Thus a *prima facie* case of obviousness cannot be established based on **Ueda, Curbelo, and Gariboldi**.

Therefore, as the Office Action fails to establish a *prima facie* case of obviousness for at least the reasons cited above the withdrawal of the rejections under 35 U.S.C § 103(a) is respectfully requested.

Accordingly, it is respectfully submitted that amended Claims 1, 14 and 15 are condition for allowance for at least the reasons stated above. Claims 2-13 and 16-22 depend therefrom, and necessarily include each of the elements and limitation thereof. It is respectfully submitted that the dependent claims are also in condition for allowance for at least the reasons stated above. All issues raised by the Examiner having been addressed; reconsideration of the rejections and an early and favorable allowance of this case is earnestly solicited.

Respectfully submitted,

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In the Drawings:

Replacement Sheets for Figure 5 are submitted herewith.